## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claims 1-24 (Cancelled)

Claim 25 (Currently Amended):      A method for laser microdissection comprising:

capturing an electronic image of at least one image detail of a specimen;

processing the at least one image detail using image analysis so as to automatically ascertain at least one object to be cut out;

automatically calculating a contour of the at least one object;

automatically defining, based on the calculated contour, a nominal cutting line around the at least one object to be cut out; and

subsequently cutting out the at least one object in response to a relative motion between a laser beam and the specimen.

Claim 26 (Previously Presented):      The method as recited in claim 25 further comprising preparing the electronic image for the processing using a contrasting method based on camera or microscope technology.

Claim 27 (Previously Presented):      The method as recited in claim 25 wherein the processing the image detail is performed using a segmenting of the electronic image:

defining a grayscale threshold value on the basis of the electronic image; and

converting, by making a comparison with the grayscale value threshold, the electronic image to a binary image including only the at least one object segmented.

Claim 28 (Previously Presented):    The method as recited in claim 27 wherein the defining a grayscale threshold value is performed by manually setting the threshold value or automatically defining the threshold value in an entropy maximization process.

Claim 29 (Previously Presented):    The method as recited in claim 25 wherein the electronic image is
either a grayscale image or a color image.

Claim 30 (Previously Presented):    The method as recited in claim 27 wherein the processing the image
detail includes:
        defining specific classification features characterizing the at least one object so as to ascertain the at least one object;
        classifying the at least one object using image analysis by determining from the image actually existing object features of the at least one object segmented and comparing the existing object features to the defined specific classification features.

Claim 31 (Previously Presented):    The method as recited in claim 30 wherein the comparing is performed so as to determine whether the actually existing object features conform with the defined specific classification features.

Claim 32 (Previously Presented):    The method as recited in claim 30 wherein the defining specific
classification features includes defining, in each instance for different object types, individual feature data records including the specific classification features.

Claim 33 (Previously Presented):    The method as recited in claim 30 wherein the defining specific classification features is performed automatically or manually in a learning process

including inputting the classification features interactively or automatically by suitably marking the at least one object.

Claim 34 (Previously Presented):     The method as recited in claim 33 wherein the marking is preformed using a mouse click.

Claim 35 (Previously Presented):     The method as recited in claim 30 wherein automatically defining the nominal cutting line is performed so as to exclude unclassified objects.

Claim 36 (Previously Presented):     The method as recited in claim 30 wherein the defining specific classification features includes defining a range of values for at least one of the specific classification features.

Claim 37 (Previously Presented):     The method as recited in claim 30 further comprising excluding from the nominal cutting line objects, identified by the comparing the existing object features to the defined specific classification features, that border on an edge of the image detail or that are only partially visible in the image detail.

Claim 38 (Previously Presented):     The method as recited in claim 25 wherein the at least one object includes a plurality of objects disposed in close proximity to one another, and further comprising combining the plurality of objects into a cluster, and wherein the automatically defining a nominal cutting line is performed so as to define a single shared nominal cutting line surrounding the cluster.

Claim 39 (Previously Presented):     The method as recited in claim 25 further comprising:
        applying a mathematical transformation so as to automatically map the nominal cutting line onto a laser cutting line; and
        converting the laser cutting line into the relative motion between the laser beam and the specimen so as to provide a laser cut.

Claim 40 (Previously Presented):    The method as recited in claim 39 further comprising initiating, by a user or automatically, the relative motion between the laser beam and the specimen.

Claim 41 (Currently Amended):    The method as recited in claim 39 ~~further comprising:~~, wherein:

the contour is an outer contour of the at least one object;

the automatically calculating includes determining ~~an~~the outer contour of the at least one object using image analysis; and

the automatically defining includes converting the outer contour into a numerical code specifying the automatically defined nominal cutting line.

Claim 42 (Previously Presented):    The method as recited in claim 41 wherein the numerical code is a
Freeman code or a chain code.

Claim 43 (Previously Presented):    The method as recited in claim 25 further comprising performing an automatic shading correction including:

recording an empty image without a specimen;

storing the empty image as a shading correction image; and

applying an offset correction to the captured electronic image using the shading correction image.

Claim 44 (Previously Presented):    The method as recited in claim 27 further comprising removing a specific unwanted object of the at least one object from the binary image using image analysis morphology, the unwanted object being not designated for microdissection.

Claim 45 (Previously Presented):    The method as recited in claim 25 further comprising providing a defined clearance distance in the specimen so as to prevent a neighboring object from being sliced through.

Claim 46 (Previously Presented):    The method as recited in claim 38 further comprising separately cutting out at least one region enclosed by the cluster and not belonging to the cluster.

Claim 47 (Previously Presented):    The method as recited in claim 25 further comprising superimposing, by an imaging device, the nominal cutting line onto the electronic image so as to control results of the cutting out.

Claim 48 (Previously Presented):    The method as recited in claim 25 further comprising:
        applying a mathematical transformation so as to automatically map the nominal cutting line onto a laser cutting line; and
        scaling the laser cutting line as a function of the image magnification.

Claim 49 (Previously Presented):    The method as recited in claim 25 further comprising:
        applying a mathematical transformation so as to automatically map the nominal cutting line onto a laser cutting line: and
        setting a defined clearance distance of the laser cutting line from the at least one so as to protect the object from damage caused by laser irradiation.

Claim 50 (Previously Presented):    The method as recited in claim 25 further comprising modifying the
nominal cutting line so as to compensate for imprecise repositioning of the microscope stage.